In the Claims:

Please amend the claims as follows:

1. (Original) An optical waveguide comprising:

a dielectric core region extending along a waveguide axis; and

a dielectric confinement region surrounding the core about the waveguide axis, the confinement region comprising a photonic crystal structure having a photonic band gap, wherein during operation the confinement region guides EM radiation in at least a first range of frequencies to propagate along the waveguide axis,

wherein the core has an average refractive index smaller than about 1.3 for a frequency in the first range of frequencies,

wherein the core has a diameter in a range between about 4λ and 80λ, wherein λ is a wavelength corresponding to a central frequency in the first frequency range, and

wherein the dielectric confinement region extends transversely from the core for at least a distance of about 6λ.

Claims 2 – 62 are Cancelled.

63. (Original) An optical waveguide comprising:

a dielectric core region extending along a waveguide axis; and

a dielectric confinement region surrounding the core about the waveguide axis, the confinement region guiding EM radiation in at least a first range of frequencies to propagate along the waveguide axis,

wherein the core has an average refractive index smaller than about 1.3 for a frequency in the first range of frequencies, and

wherein the core has a diamater in a range between about 5 microns and 170 microns.

64. (Original) The waveguide of claim 63, wherein the core has a diamater in a range between about 7 microns and 100 microns.

65. (Original) The waveguide of claim 63, wherein the core has a diamater in a range between about 10 microns and 100 microns.

Claims 66 – 68 are Cancelled.

69. (Original) A method of designing a photonic crystal optical waveguide including a dielectric core region extending along a waveguide axis and a dielectric confinement region surrounding the core about the waveguide axis, wherein the confinement region is configured to guide EM radiation in at least a first range of frequencies to propagate along the waveguide axis and wherein the core has an average refractive index smaller than about 1.3 for a frequency in the first range of frequencies, the method comprising:

selecting a transverse dimension for the core based on one or more design criteria for the guided EM radiation including mode separation, group-velocity dispersion, radiative losses, absorption losses, and cladding nonlinearity suppression.

70. (Original) The method of claim 69, wherein the transverse dimension for the core is based on at least two of the design criteria.

71. (Original) The method of claim 70, wherein an upper limit for the transverse dimension of the core is selected based on the mode separation, and wherein a lower limit for the transverse dimension is selected based on at least one of the group-velocity dispersion, the radiative losses, the absorption losses, and the cladding nonlinearity suppression.

72. (Original) The method of claim 69, wherein the confinement region comprises at least two dielectric materials having different refractive, and wherein the method further comprises:

selecting an index contrast for the different refractive indices based on at least one of the design criteria including the radiative losses, the absorption losses, and the cladding nonlinearity suppression.